

signals: V_0 , V_1 , W_0 and W_1 , as will be described later), 12 and 16 are adders. Reference numerals 13 and 14 denote interleavers. Reference numeral 15 denotes a second decoder for calculating the logarithm likelihood ratio from the receiving signal: L_{cy} (corresponding to receiving signals: V_0 , V_1 , W_0 and W_1 , as will be described later). Reference numeral 17 denotes a deinterleaver. Reference numeral 18 denotes a first judging device for judging the output of the second decoder 15 to output an estimated value of the original information bit list, and reference numeral 19 denotes a second judging device for hard-judging the L_{cy} (corresponding to receiving signals: $V_2...$, $W_2...$, as will be described later) to output an estimated value of the original information bit list.--